USDA FOREST SERVICE
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1973

PULPWOOD PRODUCTION

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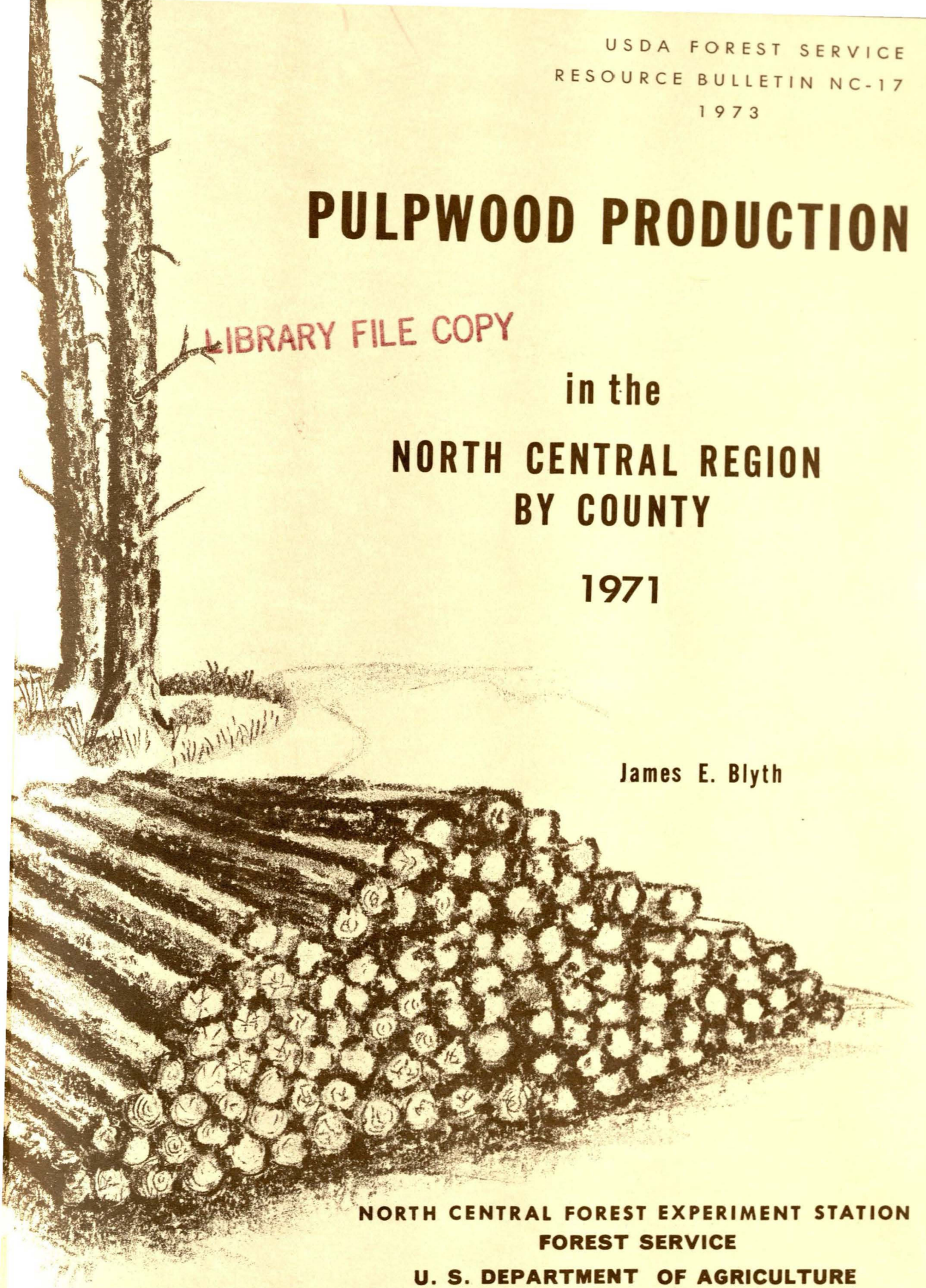
NORTH CENTRAL REGION BY COUNTY

1971



James E. Blyth

NORTH CENTRAL FOREST EXPERIMENT STATION
FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE

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1973. Pulpwood production in the North Central Region, by county, 1971. North Cent. For. Exp. Stn., St. Paul, Minn. 21 p., illus. (USDA For. Serv. Resour. Bull. NC-17)

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PULPWOOD PRODUCTION IN THE NORTH CENTRAL REGION, BY COUNTY, 1971

James E. Blyth

This is the 13th annual report on the pulpwood harvest in Lake States counties and the 12th annual report on the Central States harvest. The Lake States (Michigan, Minnesota, and Wisconsin) and Central States (Illinois, Indiana, Iowa, and Missouri) are discussed separately because the timber types in each area are different and less information can be released about the Central States — more detailed data published on pulpwood production and receipts in the Central States would reveal the operations of individual mills.

Pulpmills using North Central States timber in 1971 reported their pulpwood receipts by State and county. Their cooperation is gratefully acknowledged. Thanks are also due to Ray Pfeifer, Staff Forester, Forest Resource Development, Michigan Department of Natural Resources, for collecting data on the Michigan pulpmills, and to Jerold Hahn and Berghild Berntsen for data computations.

LAKE STATES

While national wood pulp production rose 3.6 percent in 1971, Lake States pulpwood production fell more than one-quarter million cords. A major reason for this decline was a reduction of pulpwood inventories in the Lake States of almost 100,000 cords.

Production Near 4 Million Cords

Of the 4,015,000 cords of Lake States pulpwood produced[1] in 1971, all but 1 percent was consumed in these States. More than 9 out of 10 cords was roundwood (including chips from roundwood); the remainder was residue[2] from local wood-using plants. Roundwood output declined 6 percent, and Lake States residue used for pulping dropped 11 percent. More than 8 out of 10 cords of Lake States residue delivered to pulpmills were in chip form; about 5 out of 6 cords were hardwood.

Harvests of all reported species groups declined, although the drop was minimal for pine. Aspen production fell 76,000 cords while the hemlock harvest hit a modern-day low.

Nearly one-fifth of the roundwood was peeled before delivery, primarily aspen. Thirty-seven percent of the aspen was peeled: 59 percent in Wisconsin, 32 percent in Michigan, and 14 percent in Minnesota (fig. 1).

1971 Pulpwood Production by State

Wisconsin produced 39 percent of the Lake States pulpwood, Michigan 31 percent, and Minnesota 30 percent.

The distribution of the harvest is shown in two ways: first, the amount of pulpwood cut relative to commercial forest area (fig. 2), and second, the amount of pulpwood cut relative to the merchantable volume in major pulpwood species (fig. 3).

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[1] *Pulpwood production is defined as the pulpwood volume from timber lands in a specified area that was received at all mills during 1971, whereas pulpwood receipts are defined as the volume of wood received by mills in a specified area regardless of the geographic source.*

[2] *Residue is the byproduct from sawmills, veneer mills, cooperage mills, and other wood-using plants that is used for pulping. Residue includes slabs, edgings, veneer cores, sawdust, wood flour, and chips manufactured from these byproducts.*

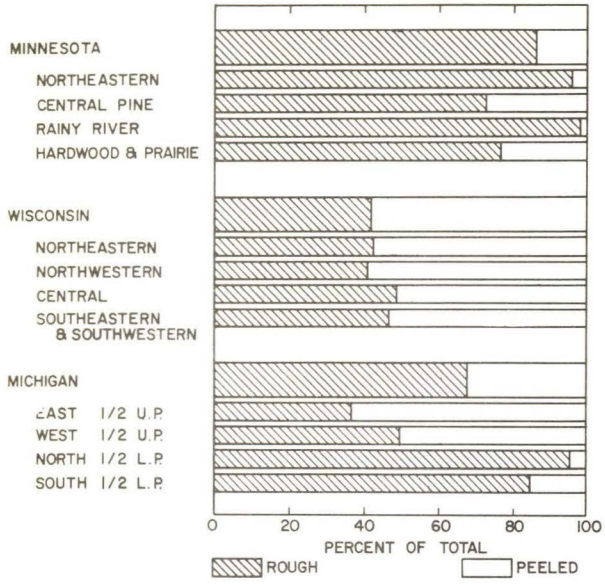


Figure 1. — *Percent of rough and peeled aspen roundwood production by State and Forest Survey Unit, 1971.*

Five Minnesota counties, 18 in Wisconsin, and 11 in Michigan, each contributed more than 100 cords of pulpwood per 1,000 acres of stocked commercial forest land. Heaviest cutting per 1,000 cords of merchantable volume in principal pulpwood species occurred in northeast and central Wisconsin.

Wisconsin production slips 6 percent. — Most of the decline occurred in aspen, birch, and other hardwoods. One-fourth of the decline in volume cut occurred in Lincoln County. Top-producing counties were Oneida, Douglas, and Marinette.

Michigan output tumbles 139,000 cords. — Volume of pulpwood cut was lower for every species group except miscellaneous hardwoods. Pulpwood logging declined most noticeably in northern Lower Michigan. Menominee, Iron, and Dickinson County loggers cut the largest pulpwood volumes.

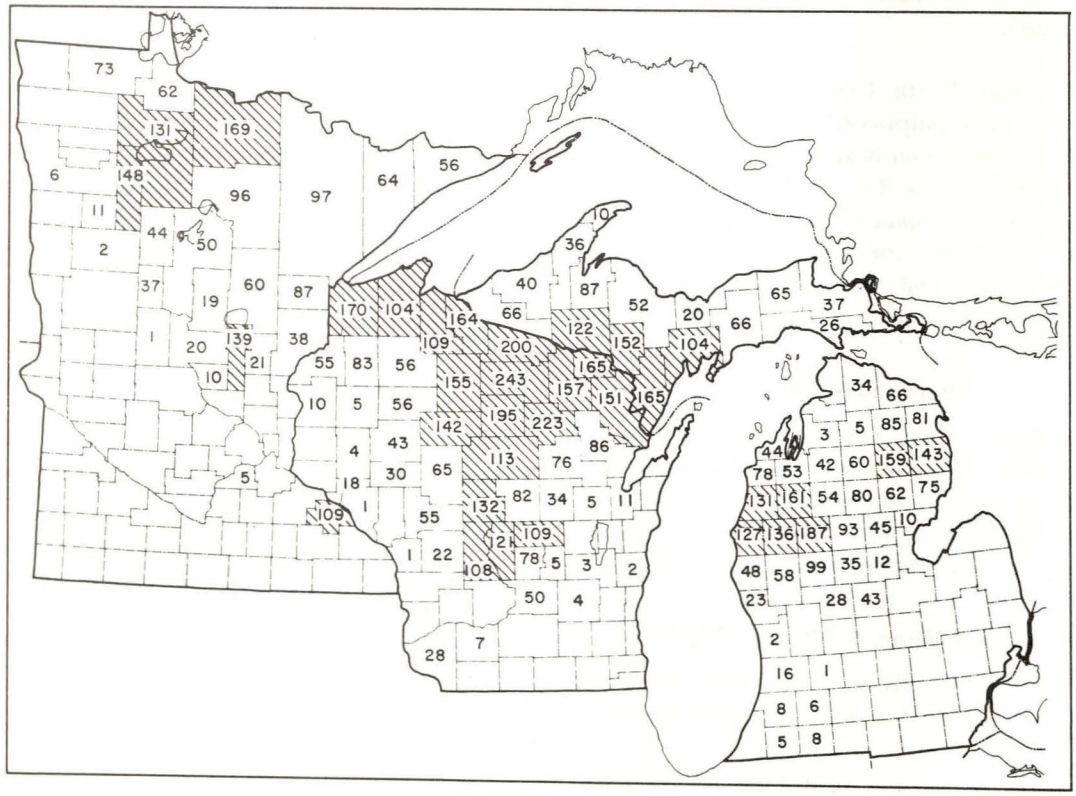


Figure 2. — *Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1971. Crosshatching shows counties that supplied 100 or more cords of pulpwood per 1,000 acres of stocked commercial forest land.*

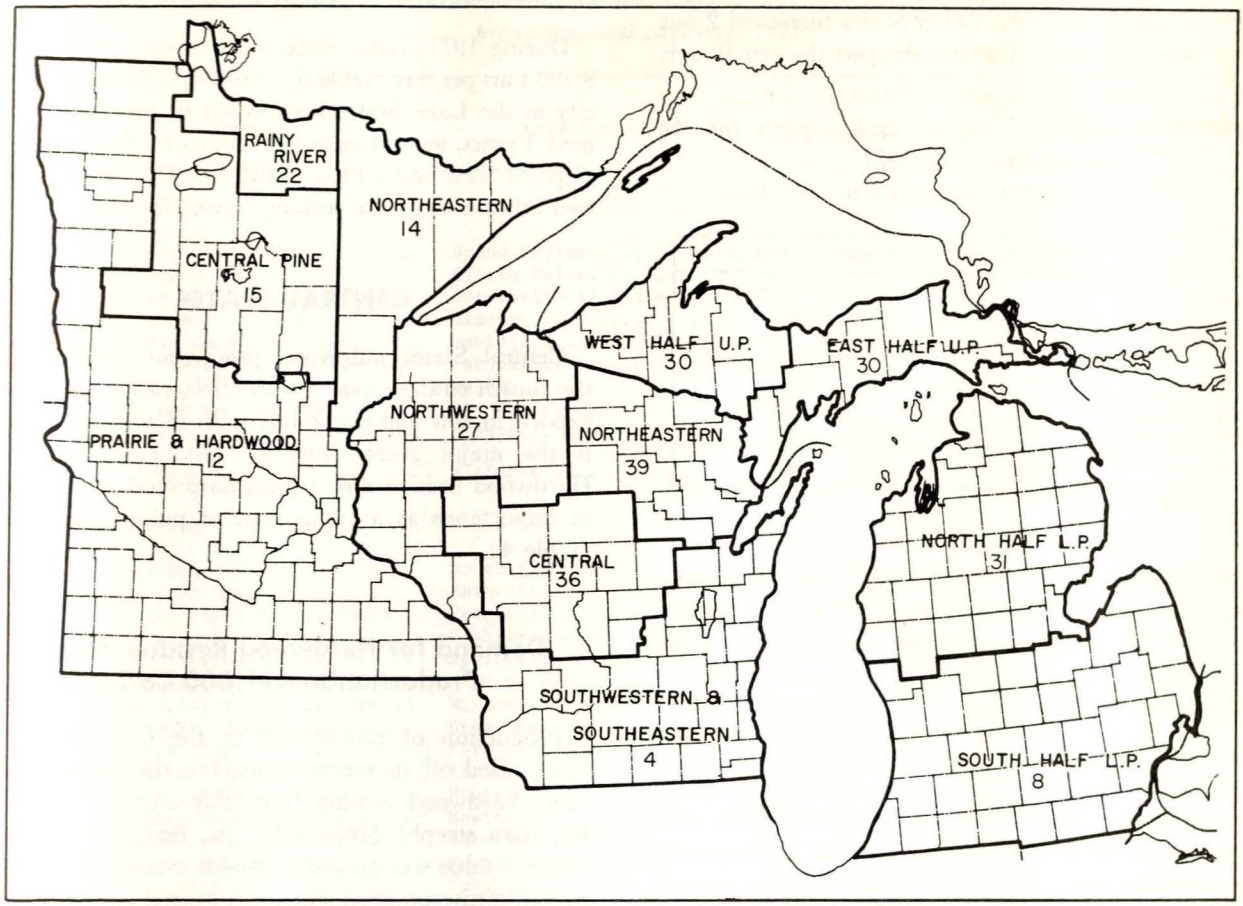


Figure 3. — *Cords of pulpwood bolts and logs harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1971. The heavy lines delineate the boundaries of the Forest Survey Units in each State.*

Minnesota production falls slightly. — Aspen, pine, and spruce constituted 83 percent of the Minnesota pulpwood output. Four large counties — St. Louis, Koochiching, Itasca, and Beltrami — provided two-thirds of the harvest.

Receipts Fall 339,000 Cords

Forty-three Lake States plants received 4.3 million cords of pulpwood in 1971. Of these plants, 38 used aspen, 22 used spruce, and 19 used balsam fir (table 1). More plants are now accepting birch and tamarack in their species mix. Eleven plants used some birch and seven used some tamarack, a gain of three over the number using these species in 1970.

Receipts of every species group were lower in 1971 than in 1970. Spruce and hemlock receipts were the lowest in a quarter century. On the other hand, softwood residue procurement increased for the sixth straight year.

Table 1. — *Number of plants using the different species of wood for pulping in 1971*

Species and kind of material	Lake States	Minnesota	Wisconsin	Michigan
Aspen	38	9	22	7
Balsam fir	19	5	10	4
Birch	11	1	6	4
Hemlock	8	--	6	2
Pine	12	3	5	4
Spruce	22	5	12	5
Tamarack	7	2	4	1
Miscellaneous hardwoods	16	2	8	6
Wood chips	12	2	6	4
Slabwood and other residue	7	1	4	2
Total plants	43	9	25	9

Net imports from other States and Canada were 329,000 cords (table 2). Other States furnished 2 out of 3 imported cords; Canada shipped the remainder.

Table 2. — *Pulpwood exports and imports for the Lake States, 1971*
(Thousand standard cords, unpeeled)

Species	Exports	Imports	Net exports or (imports)
Aspen	1	4	3
Birch	--	*	(*)
Balsam fir	*	--	*
Pine	1	67	(66)
Spruce	13	89	(76)
Mixed hardwoods	5	7	(2)
Residues, softwood	16	191	(175)
Residues, hardwood	7	14	(7)
Total	43	372	(329)

*Less than 500 cords.

Five western States — Colorado, Idaho, Montana, South Dakota, and Wyoming — each supplied more than 20,000 cords of softwood pulpwood to Lake States mills. Three-fourths of this western wood was residue delivered as chips.

Softwood roundwood imports from Canada continued to decline rapidly; less than 100,000 cords were imported in 1971, of which nine-tenths were spruce. By contrast, from 1956 to 1965, the average annual volume of round softwood purchased from Canada was more than three times as much. Since 1969, no Canadian balsam fir has been procured, and pine is now a minor import.

Receipts at Minnesota mills remained steady. Only 7 percent of their wood requirements came from out of State.

Wisconsin mills procured 239,000 fewer cords than in 1970. Receipts of birch were off 35 percent, hemlock 30 percent, and balsam fir and spruce each 20 percent. Wisconsin received all of the wood imported from western States and over two-thirds of the Canadian wood.

Pulpwood purchases in Michigan fell to the lowest level since 1962; all but 2 percent came from within the State. Aspen, miscellaneous hardwoods, and pine roundwood met more than four-fifths of Michigan's pulpwood requirements.

Regional Mill Capacity Stable in 1971

During 1971, Lake States mill capacity was about 9,500 tons per day (table 3). Although pulpmill capacity in the Lake States is expected to rise during the next 3 years, several mills may close or change ownership. At least one mill was sold in 1972, and at least two other owners are seeking buyers for their plants.

CENTRAL STATES

Central States pulpwood production climbed for the fourth straight year. As in 1970, rising pulpwood exports to new and expanding mills in adjacent States is the major reason for the production increase. Hardwood residue now equals hardwood roundwood in importance as a component of pulpwood output (table 4).

Demand for Hardwood Residue Boosts Production to 421,000 Cords

Production of roundwood in the Central States has leveled off in recent years, but the demand for more hardwood residue from this area for pulping has risen steeply. Since 1965, the first year Central States residue was pulped in sizable quantities, annual round hardwood production has ranged from 183,000 to 226,000 cords. Meanwhile, Central States hardwood residue delivered to pulpmills spurted from 26,000 cords in 1965 to 202,000 cords in 1971.

Pulpwood markets for this hardwood residue are likely to continue expanding. Large quantities of sawmill residue in Missouri are not being used and could be a valuable pulpwood supply source.

Until 1969, pulpwood demand by mills outside the Central States was a minor influence on production. In 1971, nearly one-third of the Central States pulpwood was exported, predominantly hardwood residue chips. Kentucky mills received most of this wood, with the remainder shipped to Michigan, Ohio, Minnesota, Tennessee, and Louisiana. Export markets are important to pulpwood producers in every State except Iowa (table 5).

Missouri and Illinois produced more pulpwood in 1971 than in any other year. Over the last 3 years the annual compound rate of increase in Missouri output has been 16 percent. In Illinois, production

Table 3. — *Active woodpulp mills in the Lake States, by location, type of pulp produced, and capacity, 1971*

Company	Location	Mill capacity in tons per 24 hours 1/				
		Total	Sulfite	Sulfate	Groundwood and other mechanical	Semi-chemical
Minnesota:						
Blandin Paper Co.	Grand Rapids	205	--	--	205	--
Hennepin Paper Co.	Little Falls	75	--	--	75	--
Boise Cascade Corp.	International Falls	770	--	320	450	--
Northwest Paper Co., The	Cloquet	425	120	305	--	--
Nu-Ply Corp.	Bemidji	90	--	--	90	--
St. Regis Paper Co.	Sartell	115	--	--	115	--
Superwood Corp.	Duluth	240	--	--	240	--
Hoerner Waldorf Corp.	St. Paul	300	--	--	--	300
Conwed Corp.	Cloquet	350	--	--	350	--
Total	9 plants	2,570	120	625	1,525	300
Wisconsin:						
American Can Co.	Green Bay	210	150	--	60	--
American Can Co.	Rothschild	200	200	--	--	--
Badger Paper Mills, Inc.	Peshtigo	90	90	--	--	--
Appleton Papers, Inc.	Combined Locks	175	--	--	175	--
Consolidated Papers, Inc.	Appleton	180	180	--	--	--
Consolidated Papers, Inc.	Stevens Point	100	--	--	100	--
Consolidated Papers, Inc.	Wisconsin Rapids	600	--	360	240	--
Green Bay Packaging, Inc.	Green Bay	200	--	--	--	200
Kansas City Star Co.	Park Falls	115	115	--	--	--
Kimberly-Clark Corp.	Kimberly	150	--	--	150	--
Kimberly-Clark Corp.	Niagara	150	--	--	150	--
Mosinee Paper Mills Co.	Mosinee	200	--	200	--	--
Nekoosa-Edwards Paper Co.	Nekoosa	310	--	310	--	--
Nekoosa-Edwards Paper Co.	Port Edwards	215	215	--	--	--
Owens-Illinois	Tomahawk	615	--	--	--	615
Charmin Paper Products Co.	Green Bay	2/	2/	--	2/	--
Scott Paper Co.	Marinette	50	50	--	--	--
Scott Paper Co.	Oconto Falls	110	110	--	--	--
St. Regis Paper Co.	Rhinelander	120	120	--	--	--
St. Regis Paper Co.	Cornell	50	--	--	50	--
Superior Fiber Products Co.	Superior	180	--	--	180	--
Thilmany Pulp & Paper Co.	Kaukauna	375	--	375	--	--
Tomahawk Pulp Co., Inc.	Tomahawk	50	--	--	50	--
Wausau Paper Mills Co.	Brokaw	145	145	--	--	--
Evans Products Co.	Phillips	80	--	--	80	--
Total	25 plants	4,670	1,375	1,245	1,235	815
Michigan:						
Abitibi Corp.	Alpena	430	--	--	430	--
Celotex Corp.	L'Anse	270	--	--	270	--
Hoerner Waldorf Corp.	Ontonagon	220	--	--	--	220
Manistique Pulp & Paper Co.	Manistique	90	--	--	90	--
Mead Corp., The	Escanaba	150	--	--	150	--
Menasha Corp.	Otsego	225	--	--	--	225
Packaging Corp. of America.	Filer City	600	--	200	--	400
Scott Paper Co.	Menominee	20	--	--	20	--
Warren Co., S.D.	Muskegon	240	--	240	--	--
Total	9 plants	2,245	--	440	960	845
All States	43 plants	9,485	1,495	2,310	3,720	1,960

1/ Lockwood's Directory of the Paper and Allied Industries, 1971-1972, and 1972 Directory of the Forest Products Industry.

2/ Capacity not available.

Table 4. — *Central States pulpwood production and receipts, by State, 1971*
(In standard cords, unpeeled)[1]

Species group and destination	Production[2]					Imports			Total receipts
	Illinois	Indiana	Iowa	Missouri	Region	Lake States	Other U.S.	Total imports	
Softwoods									
Illinois	400	--	--	--	400	--	--	--	400
Ind., Iowa, Mo.[3]	200	--	40	--	240	40	200	240	480
Exported[4]	1,180	--	--	882	2,062	--	--	--	--
Total	1,780	--	40	882	2,702	40	200	240	880
Soft hardwoods[5]									
Illinois	26,450	8,103	--	2,435	36,988	--	--	--	36,988
Ind., Iowa, Mo.[3]	4,720	15,870	14,843	15,583	51,016	1,777	--	1,777	52,793
Exported[4]	549	6,679	--	1,223	8,451	--	--	--	--
Total	31,719	30,652	14,843	19,241	96,455	1,777	--	1,777	89,781
Hard hardwoods[5]									
Illinois	16,105	3,142	--	856	20,103	--	--	--	20,103
Ind., Iowa, Mo.[3]	5,209	15,792	22,976	3,563	47,540	3,160	2,872	6,032	53,572
Exported[4]	5,551	18,608	--	14,577	38,736	--	--	--	--
Total	26,865	37,542	22,976	18,996	106,379	3,160	2,872	6,032	73,675
Total roundwood									
Illinois	42,955	11,245	--	3,291	57,491	--	--	--	57,491
Ind., Iowa, Mo.[3]	10,129	31,662	37,859	19,146	98,796	4,977	3,072	8,049	106,845
Exported[4]	7,280	25,287	--	16,682	49,249	--	--	--	--
Total	60,364	68,194	37,859	39,119	205,536	4,977	3,072	8,049	164,336
Residues, softwood									
Illinois	5,496	--	7,908	280	13,684	14,761	5,379	20,140	33,824
Ind., Iowa, Mo.[3]	--	--	--	--	--	--	3,752	3,752	3,752
Exported[4]	--	432	--	--	432	--	--	--	--
Total	5,496	432	7,908	280	14,116	14,761	9,131	23,892	37,576
Residues, hardwood									
Illinois	29,765	--	--	35,576	65,341	4,690	3,336	8,026	73,367
Ind., Iowa, Mo.[3]	11,317	33,986	5,783	3,640	54,726	2,500	5,504	8,004	62,730
Exported[4]	26,416	35,954	987	18,519	81,876	--	--	--	--
Total	67,498	69,940	6,770	57,735	201,943	7,190	8,840	16,030	136,097
All wood material									
Illinois	78,216	11,245	7,908	39,147	136,516	19,451	8,715	28,166	164,682
Ind., Iowa, Mo.[3]	21,446	65,648	43,642	22,786	153,522	7,477	12,328	19,805	173,327
Exported[4]	33,696	61,673	987	35,201	131,557	--	--	--	--
Total	133,358	138,566	52,537	97,134	421,595	26,928	21,043	47,971	338,009

1/ Factors used in converting to standard green cords (128 cu. ft.) were: 4,500 pounds of soft hardwood roundwood; 5,000 pounds of hard hardwood or coniferous roundwood; 4,100 pounds of softwood chips (green); 4,400 pounds of hardwood chips (green); 2,500 pounds of chips (all species, dry).

2/ Vertical columns of figures under box heading "Production" present the amount of pulpwood cut in each State.

3/ Combined to prevent disclosure of individual mill receipts.

4/ Pulpwood shipped to mills outside the region.

5/ Soft hardwoods include species such as elm, basswood, soft maple, yellow-poplar, and cottonwood. Hard hardwoods include oak, hard maple, beech, and hickory.

Table 5. — *Central States pulpwood production by State and destination, 1967-1971*
(Thousand cords)

Year	Illinois			Indiana			Iowa			Missouri		
	Total	Destination: Central States	Destination: Other States	Total	Destination: Central States	Destination: Other States	Total	Destination: Central States	Destination: Other States	Total	Destination: Central States	Destination: Other States
1967	96	96	*	84	77	7	35	35	*	37	37	--
1968	115	115	--	118	102	16	38	37	1	62	62	*
1969	132	128	4	132	107	25	31	30	1	81	71	10
1970	118	110	8	148	95	53	58	57	1	82	57	25
1971	133	99	34	139	77	62	53	52	1	97	62	35

*Less than 500 cords.

has been relatively stable for 4 years. Compared with 1970, 1971 production in Indiana and Iowa fell slightly.

Loggers cut pulpwood in 121 counties: 40 in Illinois, 34 in Indiana, 31 in Missouri, and 16 in Iowa (fig. 4). Procurement patterns were similar to those

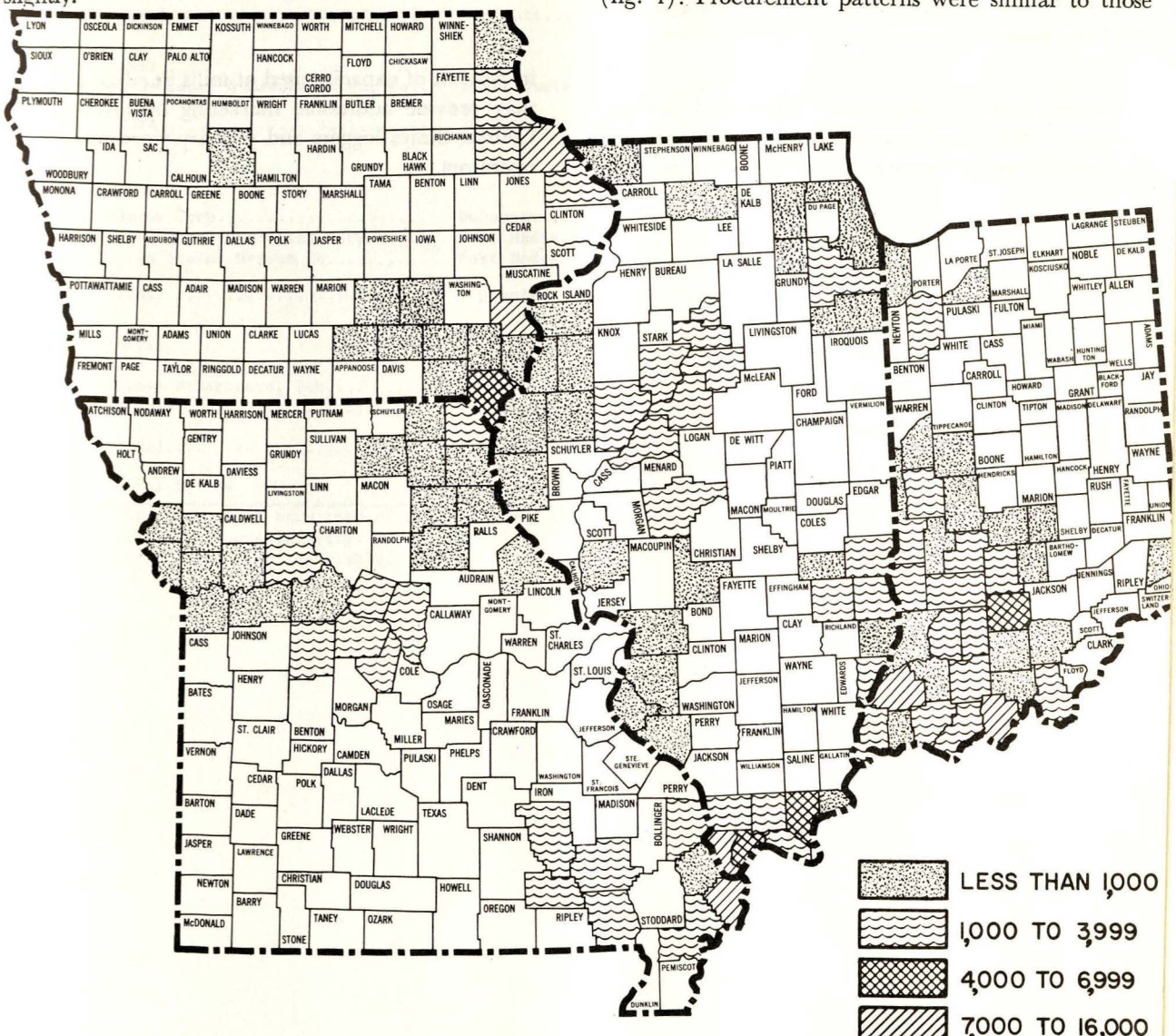


Figure 4. — *Harvest of pulpwood bolts in the Central States, by counties, in standard cords, 1971.*

in 1970 for all States except Indiana. Southeastern Indiana supplied minimal quantities of pulpwood in 1971, but significant amounts in 1970.

Receipts Down Six Percent

Fourteen Central States plants procured 338,000 cords in 1971 (table 6). While total receipts fell, demand for softwood residue rose to 37,000 cords, of which almost two-thirds was imported. Hard hardwood receipts dropped more than 20,000 cords; demand changes were minor for other species groups. Imports satisfied 14 percent of the wood requirements at Central States plants, more than half coming from the Lake States.

Pulping capacity was about 1,500 tons per day (table 7). No major expansions were announced by the resident mills. Expansions and expected increases in percent of capacity used at mills in adjacent States may provide additional marketing opportunities for Central States loggers and primary wood-using plant operators.

Table 6. — *Trends in receipts of roundwood and residue as pulpwood, Central States, 1967-1971*
(Thousand standard cords, unpeeled)

Type of material and area	1967	1968	1969	1970	1971
Roundwood					
Illinois	63	68	50	62	57
Indiana, Iowa, Missouri	138	156	146	131	107
Total	201	224	196	193	164
Residue					
Illinois	50	92	135	100	107
Indiana, Iowa, Missouri	37	50	64	68	67
Total	87	142	199	168	174
All material	288	366	395	361	338

Table 7. — *Active woodpulp mills in the Central States by location, type of pulp produced, and capacity, 1971*

Company	Location	Mill capacity in tons per 24 hours[1]				
		Total	Sulfite	Sulfate	Groundwood and other mechanical	Semi-chemical
Illinois:						
Philip Carey Corp.	Wilmington	30	--	--	30	--
Celotex Corp.	Peoria	190	--	--	190	--
Alton Box Board Co.	Alton	300	--	--	--	300
Bird & Son, Inc.	Chicago	40	--	--	40	--
Certain-Teed Products Corp.	East St. Louis	100	--	--	100	--
Flintkote Co., The	Mt. Carmel	40	--	--	40	--
Johns-Manville Products Corp.	Waukegan	65	--	--	65	--
GAF Corp.	Joliet	100	--	--	100	--
Total	8 plants	865	--	--	565	300
Indiana:						
Weston Paper & Manufacturing Co.	Terre Haute	250	--	--	--	250
Total	1 plant	250	--	--	--	250
Iowa:						
Celotex Corp.	Dubuque	90	--	--	--	90
Consolidated Packaging Corp.	Fort Madison	135	--	--	--	135
United States Gypsum Co.	Fort Dodge	[2]	--	--	--	--
Total	3 plants	225	--	--	--	225
Missouri:						
Huebert Fiberboard, Inc.	Booneville	60	--	--	60	--
GAF Corp.	Kansas City	90	--	--	90	--
Total	2 plants	150	--	--	150	--
All States	14 plants	1,490	--	--	715	775

1/ Lockwood's Directory of the Paper and Allied Industries, 1971-72, and 1972 Directory of the Forest Products Industry.

2/ Capacity not available.

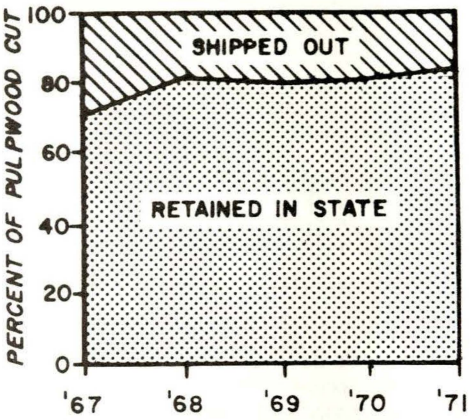
APPENDIX

Table 8. — *Lake States pulpwood production, by State of origin and destination, 1967-1971*

MINNESOTA

Year	Total cut	Destination of pulpwood: Minnesota	Wisconsin	Michigan	Other
	(Thousand standard cords)				
1967	1,205	884	299	*	22
1968	1,087	900	166	*	21
1969	1,192	977	188	--	27
1970	1,224	981	219	*	24
1971	1,196	992	188	*	16
5-year average	1,181	947	212	*	22

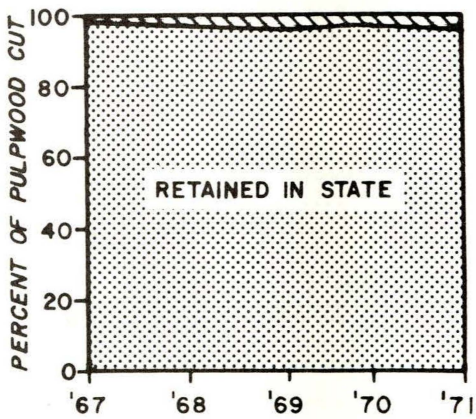
*Less than 500 cords.



WISCONSIN

Year	Total cut	Destination of pulpwood: Minnesota	Wisconsin	Michigan	Other
	(Thousand standard cords)				
1967	1,416	15	1,387	*	14
1968	1,297	22	1,259	4	12
1969	1,450	17	1,412	9	12
1970	1,656	11	1,627	10	8
1971	1,552	35	1,502	*	15
5-year average	1,474	20	1,437	5	12

*Less than 500 cords.



MICHIGAN

Year	Total cut	Destination of pulpwood: Minnesota	Wisconsin	Michigan	Other
	(Thousand standard cords)				
1967	1,344	--	660	684	*
1968	1,168	--	455	702	11
1969	1,302	--	537	752	13
1970	1,406	--	610	785	11
1971	1,267	--	567	688	12
5-year average	1,297	--	566	722	9

*Less than 500 cords.

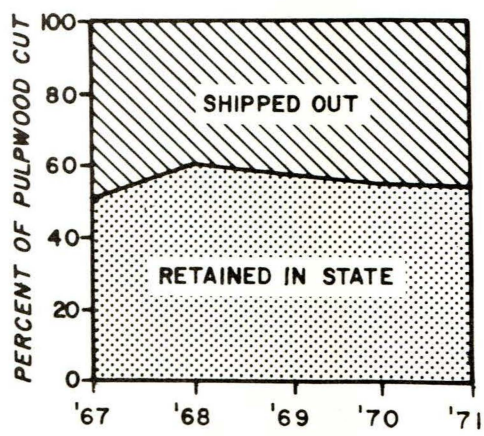


Table 9. — *Lake States pulpwood receipts by State and species, 1971*

(Thousand standard cords, roughwood basis)

Species	Minnesota	Wisconsin	Michigan	Total receipts
Aspen	585	1,011	298	1,894
Balsam fir	40	88	19	147
Birch	34	53	22	109
Hemlock	--	83	2	85
Pine	154	514	115	783
Spruce	116	167	18	301
Tamarack	*	37	*	37
Misc. hardwoods	38	295	165	498
All roundwood	967	2,248	639	3,854
Residue, softwood	32	193	1	226
Residue, hardwood	64	140	61	265
All wood material	1,063	2,581	701	4,345

*Less than 500 cords.

Table 10. — *Lake States pulpwood production, by Forest Survey Unit and destination by State, 1971*

(Thousand standard cords, roughwood basis)

MINNESOTA

Unit	Total cut	Destination of pulpwood: Minnesota	Wisconsin	Michigan	Other
Northeastern	433	330	99	--	4
Central Pine	426	348	78	*	--
Rainy River	269	248	9	--	12
Hardwood and Prairie	68	66	2	--	--
Total	1,196	992	188	*	16
WISCONSIN					
Northeastern	713	--	710	*	3
Northwestern	555	22	533	--	--
Central	239	3	231	--	5
Southeastern and Southwestern	45	10	28	--	7
Total	1,552	35	1,502	*	15
MICHIGAN					
E. 1/2 Upper Peninsula	317	--	247	58	12
W. 1/2 Upper Peninsula	371	--	320	61	--
N. 1/2 Lower Peninsula	521	--	--	521	--
S. 1/2 Lower Peninsula	48	--	--	48	--
Total	1,267	--	567	688	12

*Less than 500 cords.

Table 11. — *Lake States pulpwood production by species, State, and Survey Unit, 1967-1971*

(Thousand standard cords, roughwood basis)

MINNESOTA

Unit	ASPEN Annual production					BALSAM FIR Annual production				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
Northeastern	205	203	204	208	205	26	12	10	9	9
Central Pine	265	218	289	249	246	30	18	18	22	20
Rainy River	108	131	148	127	135	20	13	12	14	11
Prairie and Hardwood	13	31	19	16	22	--	*	--	*	--
Total	591	583	660	600	608	76	43	40	45	40
WISCONSIN										
Northeastern	430	369	416	430	402	26	25	28	40	35
Northwestern	273	202	244	296	302	21	22	22	29	19
Central	35	55	35	44	31	*	4	*	*	*
Southeastern and Southwestern	1	3	2	1	1	*	--	--	--	--
Total	739	629	697	771	736	47	51	50	69	54
MICHIGAN										
E. 1/2 Upper Peninsula	144	95	119	124	125	50	39	27	41	26
W. 1/2 Upper Peninsula	237	167	184	180	177	38	22	16	25	25
N. 1/2 Lower Peninsula	258	274	296	288	242	3	1	1	*	1
S. 1/2 Lower Peninsula	7	5	7	4	3	--	--	--	--	--
Total	646	541	606	596	547	91	62	44	66	52
LAKE STATES	1,976	1,753	1,963	1,967	1,891	214	156	134	180	146

*Less than 500 cords.

(Continued on next page)

MINNESOTA

Unit	BIRCH Annual production					HEMLOCK Annual production				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
Northeastern	1	*	3	17	8	--	--	--	--	--
Central Pine	2	1	*	12	26	--	--	--	--	--
Rainy River	--	--	--	2	1	--	--	--	--	--
Prairie and Hardwood	--	--	--	*	*	--	--	--	--	--
Total	3	1	3	31	35	--	--	--	--	--
WISCONSIN										
Northeastern	28	18	23	32	22	27	22	32	33	28
Northwestern	46	35	37	42	28	13	18	16	16	13
Central	10	3	3	2	1	2	4	3	3	1
Southeastern and Southwestern	*	*	--	--	--	--	*	--	--	--
Total	84	56	63	76	51	42	44	51	52	42
MICHIGAN										
E. 1/2 Upper Peninsula	3	2	1	4	1	16	9	11	17	8
W. 1/2 Upper Peninsula	2	*	1	2	3	44	36	52	52	34
N. 1/2 Lower Peninsula	6	11	21	27	19	--	--	*	*	*
S. 1/2 Lower Peninsula	--	--	*	--	--	--	--	--	--	--
Total	11	13	23	33	23	60	45	63	69	42
LAKE STATES	55	70	89	140	109	102	89	114	121	84

*Less than 500 cords.

(Continued on next page)

MINNESOTA

Unit	JACK PINE[1/] Annual production					SPRUCE Annual production				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
Northeastern	108	121	133	123	119	93	66	66	64	64
Central Pine	69	62	74	68	57	45	31	27	31	29
Rainy River	11	12	18	19	26	79	60	60	85	74
Prairie and Hardwood	14	8	12	11	12	1	*	1	1	1
Total	202	203	237	221	214	218	157	154	181	168
WISCONSIN										
Northeastern	45	46	63	72	68	10	7	10	12	9
Northwestern	61	57	77	96	105	3	3	3	4	3
Central	67	94	75	87	93	*	1	*	*	*
Southeastern and Southwestern	1	2	1	4	2	--	--	--	--	--
Total	174	199	216	259	268	13	11	13	16	12
MICHIGAN										
E. 1/2 Upper Peninsula	40	39	59	57	80	33	23	20	29	22
W. 1/2 Upper Peninsula	36	33	38	34	41	40	16	18	22	22
N. 1/2 Lower Peninsula	115	131	109	145	110	2	*	1	*	1
S. 1/2 Lower Peninsula	2	2	1	4	4	--	--	--	--	--
Total	193	205	207	240	235	75	39	39	51	45
LAKE STATES	569	607	660	720	717	306	207	206	248	225

*Less than 500 cords.

(Continued on next page)

1/ Includes small quantity of red and white pine.

Unit	TAMARACK Annual production					MISCELLANEOUS HARDWOODS Annual production				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
Northeastern	6	4	4	5	4	9	7	11	14	12
Central Pine	27	16	14	23	22	6	5	11	3	*
Rainy River	4	4	2	7	5	23	9	8	9	9
Prairie and Hardwood	3	1	1	1	1	1	2	2	1	9
Total	40	25	21	36	32	39	23	32	27	30
WISCONSIN										
Northeastern	2	3	1	2	2	64	60	87	110	105
Northwestern	1	2	1	2	1	62	50	61	79	67
Central	--	*	*	*	*	71	68	81	99	89
Southeastern and Southwestern	--	--	--	--	--	6	7	9	8	8
Total	3	5	2	4	3	203	185	238	296	269
MICHIGAN										
E. 1/2 Upper Peninsula	1	1	1	2	1	6	3	10	18	14
W. 1/2 Upper Peninsula	*	1	1	1	2	79	48	38	28	41
N. 1/2 Lower Peninsula	--	--	--	--	--	112	116	141	143	136
S. 1/2 Lower Peninsula	--	--	--	--	--	2	4	7	7	6
Total	1	2	2	3	3	199	171	196	196	197
LAKE STATES	44	32	25	43	38	484	379	466	519	496

*Less than 500 cords.

(Continued on next page)

MINNESOTA

Unit	RESIDUE					ALL SPECIES[1]				
	Annual production					Annual production				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
Northeastern	11	8	6	12	12	459	421	437	452	433
Central Pine	9	12	4	28	26	453	363	437	436	426
Rainy River	4	11	5	5	8	249	240	253	268	269
Prairie and Hardwood	12	21	30	38	23	44	63	65	68	68
Total	36	52	45	83	69	1,205	1,087	1,192	1,224	1,196
WISCONSIN										
Northeastern	41	53	49	43	42	673	603	709	774	713
Northwestern	22	21	17	17	17	502	410	478	581	555
Central	22	16	16	20	24	207	245	213	255	239
Southeastern and Southwestern	26	27	38	33	34	34	39	50	46	45
Total	111	117	120	113	117	1,416	1,297	1,450	1,656	1,552
MICHIGAN										
E. 1/2 Upper Peninsula	2	2	29	37	40	295	213	277	329	317
W. 1/2 Upper Peninsula	32	34	54	63	36	508	357	402	407	381
N. 1/2 Lower Peninsula	11	16	6	12	12	507	549	575	615	521
S. 1/2 Lower Peninsula	23	38	33	40	35	34	49	48	55	48
Total	68	90	122	152	123	1,344	1,168	1,302	1,406	1,267
LAKE STATES	215	259	287	348	309	3,965	3,552	3,944	4,286	4,015

1/ Including residues.

Table 12. — *Lake States pulpwood production by county and species, 1971*

(Thousand standard cords, roughwood basis)

WISCONSIN

Unit and county[1]	All species	Aspen	Balsam	Birch	Hemlock	Pine	Spruce	Tamarack	Miscellaneous hardwoods	Residues[2]
NORTHEASTERN:										
Florence	43	35	1	*	3	1	1	--	2	
Forest	82	48	8	1	6	5	1	*	13	
Langlade	84	57	1	4	1	2	*	1	18	
Lincoln	77	44	6	3	1	4	1	*	18	
Marinette	97	73	6	*	1	9	2	*	6	
Oconto	30	25	1	1	*	2	*	--	1	
Oneida	136	66	8	7	2	25	3	1	24	
Shawano[3]	37	19	*	*	12	1	*	*	5	
Vilas	85	35	4	6	2	19	1	*	18	
Total	713	402	35	22	28	68	9	2	105	42
NORTHWESTERN:										
Ashland	56	32	6	2	3	7	1	*	5	
Barron	1	*	--	*	--	--	--	--	1	
Bayfield	78	43	*	5	1	26	1	--	2	
Burnett	17	2	--	--	--	15	--	*	*	
Douglas	102	72	*	1	--	28	*	*	1	
Iron	60	47	2	2	2	1	*	*	6	
Polk	2	*	--	--	--	2	--	--	--	
Price	91	48	6	9	1	6	1	1	19	
Rusk	18	12	*	1	*	*	*	--	5	
Sawyer	34	14	3	5	2	4	*	*	6	
Taylor	51	22	1	3	4	*	*	*	21	
Washburn	28	10	1	*	*	16	*	*	1	
Total	555	302	19	28	13	105	3	1	67	17
CENTRAL:										
Adams	30	*	--	*	--	18	--	--	12	
Chippewa	9	6	--	*	*	1	--	--	2	
Clark	17	4	*	*	*	3	--	--	10	
Eau Claire	5	1	--	--	--	4	--	--	*	
Jackson	19	*	--	--	--	18	--	--	1	
Juneau	25	*	--	*	--	17	--	--	8	
Marathon	41	13	*	1	1	1	*	--	25	
Marquette	7	--	--	--	--	1	--	--	6	
Monroe	5	1	--	--	--	3	--	--	1	
Portage	13	2	*	--	*	5	*	*	6	
Waupaca	5	3	*	--	*	1	--	--	1	
Waushara	12	*	--	*	--	8	--	--	4	
Wood	27	1	*	*	*	13	*	*	13	
Total	239	31	*	1	1	93	*	*	89	24

(Continued on next page)

WISCONSIN (continued)

Unit and county 1/	All species	Aspen	Balsam	Birch	Hemlock	Pine	Spruce	Tamarack	Miscellaneous hardwoods	Residues 2/
SOUTHWESTERN:										
Buffalo	*	--	--	--	--	*	--	--	--	
Dunn	*	--	--	--	--	*	--	--	--	
Grant	4	--	--	--	--	--	--	--	4	
Iowa	1	--	--	--	--	--	--	--	1	
La Crosse	*	--	--	--	--	*	--	--	--	
Pepin	1	--	--	--	--	1	--	--	--	
Richland	*	--	--	--	--	*	--	--	--	
Sauk	*	--	--	--	--	*	--	--	--	
Trempealeau	--	--	--	--	--	--	--	--	--	
Total	32	--	--	--	--	1	--	--	5	26
SOUTHEASTERN:										
Brown	1	1	--	--	--	*	--	--	*	
Columbia	4	--	--	--	--	1	--	--	3	
Dodge	*	*	--	--	--	--	--	--	--	
Fond du Lac	*	--	--	--	--	*	--	--	--	
Green Lake	*	--	--	--	--	*	--	--	--	
Outagamie	*	--	--	--	--	--	--	--	*	
Sheboygan	*	--	--	--	--	*	--	--	--	
Total	13	1	--	--	--	1	--	--	3	8
State total	1,552	736	54	51	42	268	12	3	269	117

*Less than 500 cords.

1/ Includes only those counties that supplied pulpwood in 1971.

2/ County figures are not available.

3/ Includes Menominee County.

(Continued on next page)

MICHIGAN

Unit and county[1]	All species	Aspen	Balsam	Birch	Hemlock	Pine	Spruce	Tamarack	Miscellaneous hardwoods	Residues[2]
E. 1/2 UPPER PENINSULA:										
Alger	11	2	1	*	--	6	1	--	1	
Chippewa	28	6	1	*	*	14	3	*	4	
Delta	64	24	11	1	4	16	6	*	2	
Luce	34	1	2	*	1	25	4	*	1	
Mackinac	14	5	1	*	--	4	1	--	3	
Menominee	84	67	7	*	2	*	5	1	2	
Schoolcraft	42	20	3	*	1	15	2	*	1	
Total	317	125	26	1	8	80	22	1	14	40
W. 1/2 UPPER PENINSULA:										
Baraga	46	22	*	1	6	8	1	1	7	
Dickinson	68	49	7	*	2	2	6	1	1	
Gogebic	41	17	2	*	9	5	1	*	7	
Houghton	20	10	1	*	5	1	*	*	3	
Iron	84	48	8	1	5	3	4	*	15	
Keweenaw	2	--	1	--	--	--	1	--	--	
Marquette	56	15	6	*	3	22	9	*	1	
Ontonagon	28	16	*	1	4	*	*	--	7	
Total	381	177	25	3	34	41	22	2	41	36
N. 1/2 LOWER PENINSULA:										
Alcona	45	27	*	2	--	5	*	--	11	
Alpena	16	10	*	1	--	2	*	--	3	
Antrim	1	*	--	--	--	1	--	--	--	
Arenac	1	*	--	*	--	--	--	--	1	
Benzie	9	6	--	1	--	--	--	--	2	
Charlevoix	*	*	--	--	--	--	--	--	--	
Cheboygan	11	7	*	1	--	1	*	--	2	
Clare	21	11	--	1	--	4	--	--	5	
Crawford	18	1	*	*	--	15	*	--	2	
Gladwin	8	4	--	1	--	1	--	--	2	
Grand Traverse	8	4	--	*	--	1	--	--	3	
Iosco	18	2	*	*	--	15	*	--	1	
Isabella	3	2	--	--	--	--	--	--	1	
Kalkaska	11	6	*	*	--	3	*	--	2	
Lake	39	10	--	1	*	9	--	--	19	
Leelanau	5	3	--	*	--	--	*	--	2	
Manistee	28	13	--	1	*	1	--	--	13	
Mason	20	8	--	1	*	4	--	--	7	
Mecosta	14	9	--	*	--	1	--	--	4	
Midland	2	2	--	--	--	--	--	--	--	
Missaukee	12	8	*	1	*	*	*	--	3	
Montmorency	24	17	*	1	--	1	*	--	5	
Newaygo	18	8	--	*	--	2	--	--	8	
Oceana	7	2	--	*	--	*	--	--	5	
Ogemaw	15	6	--	1	--	4	--	--	4	
Osceola	32	21	--	1	--	*	--	--	10	
Oscoda	47	20	*	2	--	20	*	--	5	
Otsego	1	*	--	--	--	*	--	--	1	
Presque Isle	19	10	1	3	--	2	1	--	2	
Roscommon	21	11	*	*	*	5	*	--	5	
Wexford	35	14	--	*	--	13	--	--	8	
Total	521	242	1	19	*	110	1	--	136	12

(Continued on next page)

MICHIGAN (Continued)

Unit and county[1]	All species	Aspen	Balsam	Birch	Hemlock	Pine	Spruce	Tamarack	Miscellaneous hardwoods	Residues[2]
S. 1/2 LOWER PENINSULA:										
Allegan	2	*	--	--	--	1	--	--	1	
Barry	*	--	--	--	--	--	--	--	*	
Cass	*	--	--	--	--	*	--	--	--	
Gratiot	2	1	--	--	--	*	--	--	1	
Ionia	*	*	--	--	--	--	--	--	*	
Kent	*	--	--	--	--	*	--	--	*	
Montcalm	3	1	--	--	--	*	--	--	2	
Muskegon	4	*	--	--	--	3	--	--	1	
Ottawa	*	--	--	--	--	*	--	--	*	
St. Joseph	1	1	--	--	--	--	--	--	*	
Van Buren	1	*	--	--	--	--	--	--	1	
Total	48	3	--	--	--	4	--	--	6	35
State total	1,267	547	52	23	42	235	45	3	197	123

*Less than 500 cords.

1/ Includes only those counties that supplied pulpwood in 1971.

2/ County figures are not available.

(Continued on next page)

MINNESOTA

Unit and county[1]	All species	Aspen	Balsam	Birch	Pine	Spruce	Tamarack	Miscellaneous hardwoods	Residues[2]
NORTHEASTERN:									
Carlton	27	21	1	3	1	1	*	--	
Cook	36	4	1	--	7	24	*	--	
Lake	65	14	1	2	27	21	--	--	
Pine	14	11	--	*	*	--	*	3	
St. Louis	279	155	6	3	84	18	4	9	
Total	433	205	9	8	119	64	4	12	12
CENTRAL PINE:									
Aitkin	42	32	2	1	1	2	4	--	
Becker	1	1	*	*	*	*	--	--	
Beltrami	107	60	8	13	15	6	5	--	
Cass	46	31	1	3	8	1	2	--	
Clearwater	48	39	*	1	3	1	4	--	
Crow Wing	8	3	*	*	5	*	--	--	
Hubbard	18	11	*	*	6	*	1	--	
Itasca	126	68	9	8	16	19	6	*	
Wadena	4	1	--	*	3	--	--	--	
Total	426	246	20	26	57	29	22	*	26
RAINY RIVER:									
Koochiching	237	134	11	1	23	55	4	9	
Lake of the Woods	24	1	*	--	3	19	1	--	
Total	269	135	11	1	26	74	5	9	8
HARDWOOD:									
Benton	*	*	--	--	--	--	--	--	
Kanabec	3	3	--	--	--	--	--	--	
Mille Lacs	17	13	--	--	--	--	--	4	
Morrison	4	4	--	*	*	--	--	--	
Scott	*	*	--	--	--	--	--	--	
Todd	*	--	--	--	*	--	--	--	
Wabasha	5	--	--	--	--	--	--	5	
Total	52	20	--	*	*	--	--	9	23
PRAIRIE:									
Mahnomen	1	1	--	--	--	--	*	--	
Polk	1	--	--	--	--	--	1	--	
Roseau	14	1	--	--	12	1	--	--	
Total	16	2	--	--	12	1	1	--	--
State total	1,196	608	40	35	214	168	32	30	69

*Less than 500 cords.

1/ Includes only those counties that supplied pulpwood in 1971.

2/ County figures are not available.

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Blyth, James E.

1973. Pulpwood production in the North Central Region, by county, 1971. North Cent. For. Exp. Stn., St. Paul, Minn. 21 p., illus. (USDA For. Serv. Resour. Bull. NC-17)

Presents 1971 pulpwood production and receipt data for the Lake States and Central States. Pulpwood production for the Lake States is given by species for each county, and production by Forest Survey Unit is compared with that of previous years. For the Central States, 1971 pulpwood production and receipt data are presented by State, and four production classes are shown by county.

OXFORD: 861.0(77):721:792. KEY WORDS: roundwood, residue, receipts, Lake States, Central States.

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RECENT REPORTS ON PULPWOOD PRODUCTION PUBLISHED BY THE NORTH CENTRAL FOREST EXPERIMENT STATION

Pulpwood production in Lake States Counties, by Arthur G. Horn:

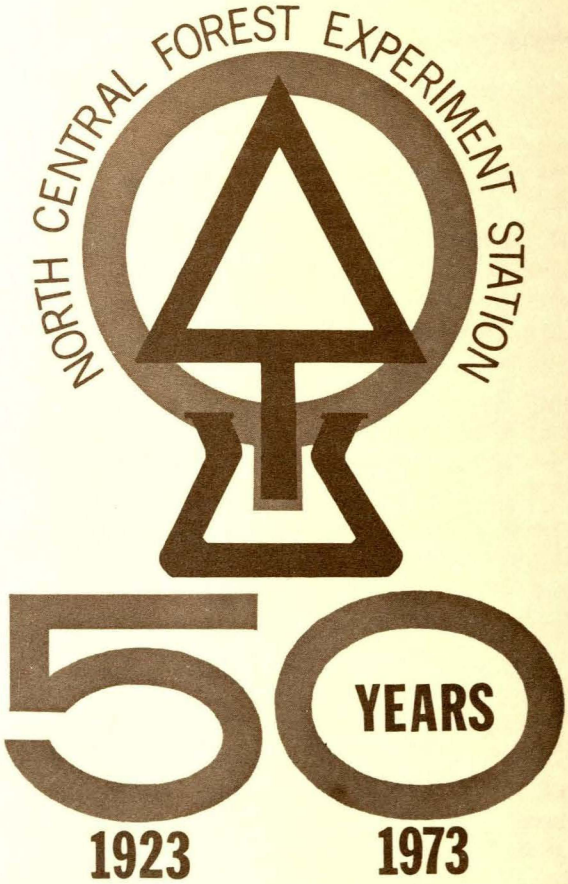
- 1961 data: Station Paper 106, 18 p.
- 1962 data: Research Paper LS-5, 16 p.
- 1963 data: Resource Bulletin LS-1, 17 p.
- 1964 data: Resource Bulletin LS-2, 19 p.

Pulpwood Production in the North Central Region by County, by James E. Blyth:

- 1965 data: Resource Bulletin NC-2, 24 p.
- 1966 data: Resource Bulletin NC-3, 27 p.
- 1967 data: Resource Bulletin NC-6, 23 p.
- 1968 data: Resource Bulletin NC-8, 22 p.
- 1969 data: Resource Bulletin NC-11, 23 p.
- 1970 data: Resource Bulletin NC-13, 22 p.

Brief Notes for the past 10 years are:

- 1961: Tech. Note 624
- 1962: Research Note LS-23
- 1963: Research Note LS-48
- 1964: Research Note LS-65
- 1965: Research Note NC-3
- 1966: Research Note NC-31
- 1967: Research Note NC-59
- 1968: Research Note NC-86
- 1969: Research Note NC-100
- 1970: Research Note NC-126
- 1971: Research Note NC-148


NORTH CENTRAL FOREST EXPERIMENT STATION
50
YEARS
1923
1973